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Original research article

Farm power: How a new business model impacts the energy transition in Finland

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ABSTRACT

This study focuses on how a hybrid actor challenges dominant expectations about markets and rules by creating a novel business model, Farm Power, that links locally produced small-scale renewable energy directly with energy end-users. We explore the potential of Farm Power to influence the energy transition by studying how the business model is interpreted and given meaning by different actors. Drawing on the conceptual framework of institutional anchoring, this paper identifies emerging storylines that reflect expectations related to the institutionalized beliefs, values and rules governing the energy market in Finland. The implications of our results are that while the business model challenges dominant expectations of cheap and anonymous electricity, it also legitimates the notion of market-based energy transitions and that the role of hybrid actors in initiating change in the energy sector deserves more attention.

1. Introduction

Electricity is mostly an anonymous and standardized product [1] where artisanal production is rarely appreciated – in contrast to food, for example. Thus, small-scale renewable power producers are forced to compete on the same grounds as others, unless the state steps in. Is it imaginable to sell electricity that gains its value from its originality and locality: who produced it, where and how? There is some previous research on how various actors in the value chain can shape expectations in sustainability transitions, especially regarding the food systems [2,3]. This study broadens the discussion to the energy sector. We explore the case of Farm Power, a business model launched by an incumbent power supplier, in collaboration with small local power producers. We analyze how stakeholders interpret this novel business model and how it problematizes existing expectations in the electricity market.

We ground our analysis in the strategic niche management approach [4,5], which argues that niche innovations need to be developed within protected spaces, where they can grow and accumulate in order to transform the incumbent regime (i.e., the dominant and taken-for-granted set of actors, rules and roles in an industry). Yet, alongside technological innovation, the importance of novel business models has gained attention in recent years [6–10], providing contributions to the strategic niche management literature [2,11] on how businesses create value and shape beliefs in extended activity systems [7,8,12,13].

This extended approach to business models and on their wider societal implications has relevance for the debate on the contribution of new entrants and industry incumbents to transformative innovations in the energy sector [14–20]. For example, Hockerts and Wüstenhagen [21] and Smith [22] have argued that new entrants introduce radical innovations, which are then taken up by incumbents in a diluted form. However, energy incumbents also collaborate with new entrants in order to create shared value [23,24] and endow emerging business fields with enhanced credibility and legitimacy [19].

This type of industry incumbents that are actively involved in sector transformations are termed *hybrid actors* by Elzen et al. [25]. Hybrid actors create provisional linkages (termed *anchoring* [25]) between innovative solutions and the dominant market logics of the incumbent regime, and thus recent research has highlighted the potential importance of hybrid actors for the energy transition (e.g. [25,26]). By engaging in both niche and regime "worlds", such actors develop provisional links between new, more sustainable alternatives and the practices of the incumbent regime. Such anchoring can occur by creating new relationships, but also by linking between the rules and beliefs of niche innovators and the incumbent regime. These rules and beliefs are central to "industry recipes" of how value is created [8]. When such recipes are challenged by industry transformation, firms are launched into a search for new visions, requirements and preferences (i.e., expectations) regarding the application of new technologies [27], such as distributed renewable energy [9]. Apajalahti et al. [19]

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conclude that incumbent actors attempt to influence the dynamics of emerging fields in directions that secure their advantage. Therefore, hybrid actors can also have a role in restructuring the energy market in a direction that enables the survival of established companies. Hybrid actors thus might play a particular role in the search and transformation of rules and beliefs, but their role in creating new market expectations – in particular, through the process of launching new business models – remains unexplored.

Our research question is: *How does a novel business model influence expectations about market beliefs and rules?* Through this question, we aim to explore the potential of hybrid actors in initiating change in the energy sector. Drawing on a discourse analysis of emerging storylines engendered by the hybrid actor's new business model, we explore how Farm Power is interpreted and its implications for the energy market are articulated by firm representatives, current and potential customers, other supply chain stakeholders, and powerful stakeholders in the institutional environment. We identify the storylines that emerge when key stakeholders interpret a novel business model, which, as an anchoring activity of a hybrid actor, has the potential to either challenge or to legitimate the institutionalized beliefs, values and rules governing the energy market.

In this paper we first review the strategic niche management literature on how new business models, developed by hybrid actors, can shape markets and expectations. We then present the research context from which our case study was selected, introduce the Farm Power business model, and our research data and methods. The results section introduces the emerging storylines identified and the resulting expectations that different storylines influence. We conclude by discussing how the business model introduced by a hybrid actor serves as an impetus for a renegotiation of expectations concerning rules and requirements in an energy market in transition.

2. Conceptual framework: New business models shaping markets and expectations

Our conceptual framework draws on the strategic niche management literature that focuses on business models, and on competition and collaboration among new entrants and industry incumbents. In the following, we review the potential of novel business models in transforming the energy system and influencing expectations in the business and institutional environment. Thus, we perceive novel business models as a way for firms to survive technological shifts [28], to create and capture value from new technologies [29], but highlight the potential of novel business models to reconfigure institutionalised market beliefs and rules, as well as market expectations, drawing on literature from other fields [2,22,30].

2.1. Hybrid actors and novel business models in strategic niche management

Entrepreneurs are often identified as the source of disruptive sustainable innovations, which are then taken up and integrated, in diluted form, by industry incumbents [21,22]. The strategic niche management approach argues that niche innovations gaining empowerment in protected spaces can grow and accumulate to challenge and overturn the incumbent regime (i.e., the dominant and taken-for-granted set of actors, rules and roles in an industry) [4,5], or in reconfigurational pathways, become integrated into the incumbent regime [31].

While the strategic niche management approach has focused on technological novelties, business model research within this field extends similar ideas to broader formulae for producing value within an industry. From this perspective, incumbent energy companies' existing business models serve as 'industry recipes', which stabilize the regime by influencing both the incumbent companies' and their stakeholders' beliefs about how value is (and must be) created [8]. Yet, Bidmon and Knab [8] have shown how incumbent energy companies may develop an interest in novel technologies if these are represented by easily recognizable business models that function as intermediates between innovative niche technologies and the incumbent regime rules. Given their superior financial resources and established customer bases, energy incumbents can also help new sustainable entrants by collaborating to create shared value [23].

Incumbent organizations can thus serve as *hybrid actors* [25] creating provisional linkages (termed anchoring) between the innovative solutions created in niches by new entrants, and the dominant logic of the incumbent regime. According to Elzen et al. [25], hybrid actors are individuals or organizations representing the incumbent regime and its practices, and acting in their own interests, but 'accidentally' also creating connections between niches and regimes due to their engagement in sustainable innovations. Such actors create connections between new, more sustainable alternatives and the actors and practices of the incumbent regime, for example by adopting and adapting niche innovations into the regime [2]. Elzen et al. [25] have identified three forms of anchoring: institutional, network and technological anchoring (which can occur either within the niche, or between the niche and regime). In "institutional anchoring", institutions refer to interpretive institutions (shared and routinized patterns of sensemaking), normative institutions (such as values linked to particular markets) as well as regulative and economic institutions such as laws and rules governing market transactions [25].

Institutional anchoring, according to the Elzen et al. [[25] p. 6] means that "developments within a niche are translated into new or adapted (interpretative, normative or economic) rules that play a role, at least temporarily, in orienting the activities of both niche and regime actors." Such institutional anchoring can occur, for example, through the normalization of new solutions within an industry. It can also occur through the enactment of regulation favouring the new solution, or the removal of regulation hindering it. Finally, institutional anchoring might also change incumbent actors' perceptions of their economic interests by highlighting the financial benefits of sustainable innovations [25].

Institutional anchoring is closely connected to "network anchoring", where new relationships are developed between entrant and incumbent actors. However, the paths taken by anchoring processes are "crooked" [[25], p. 13], as ideas and practices travel back and forth between the niche and the regime, and can change the characteristics of the novelty, the rules and expectations surrounding it, as well as the network of actors. Moreover, anchoring does not necessarily lead to stable links; provisional connections can be broken at a later stage [25]. Hence, the notion of hybrid actors suggests that energy incumbents engaged in sustainable innovation might serve to influence market beliefs, values and rules in the favor of those sustainable innovations, but that the outcomes cannot be foreseen at the onset.

2.2. Articulating, negotiating and influencing expectations via novel business models

The strategic niche management perspective highlights the role of innovations in the articulation of future visions and expectations [5]. While this articulation of expectations was originally seen as occurring within an expanding circle of niche innovation participants, it has subsequently been used to highlight the importance of niche-regime interactions, which can be competitive or symbiotic [5]. For example, Smith [22] examined the diverse translations that occurred between alternative, sustainability-oriented niches and incumbent regimes, which could proceed via translations of problems into new more sustainable solutions, adoption of alternative business models into the incumbent regime, or mutual adaptation of both alternative and incumbent business models.

It is well known that innovators attempt to shape expectations in order to promote their visions of a future in which the technologies they represent are crucial [32,33]. In particular, innovators in sustainable niches aim to embed these expectations in larger societal narratives that

provide broader cultural legitimacy [34,35]. Here, the term "expectations" refers primarily to diverse stakeholders' expectations concerning the market development and necessity of an innovation.

Yet the word expectations has a double meaning, and can also refer to the beliefs, aspirations and rules governing a market [23] (i.e., users' and other stakeholders' *expectations or requirements towards products, production methods and the rules governing these*). For example, Schot et al. [36] have argued that a disruption of existing user preferences originating in the incumbent regime can be critical for a sustainability transition. Hence, strategic niche management for sustainable innovations can also involve processes where niche actors purposefully encourage users to question their expectations – for example, concerning their energy needs [36]. It is this meaning of expectations that we refer to when we discuss institutional anchoring in the following, i.e., the creation of provisional links between established and emerging beliefs and assessments about user expectations and market rules in the niche and the regime [25].

Since novel business models in the energy sector follow different logics than the incumbent regime [18], a critical question is whether they contribute to a reorientation of conceptualizations of value within the energy system [7]. In the energy sector, market rules and user expectations are actively challenged and shaped by social movements and user-citizens [36,37]. However, firms also attempt to influence market rules and customer expectations [38], as has been shown in the development of more sustainable food markets, where innovative firms engage in explicit attempts to shape user expectations and prevailing conceptions of worth in the market [2,3,30]. In the energy sector, Apajalahti et al. [19] have shown how incumbent companies engaging in new technological fields (solar energy and electric vehicles) shaped the field boundaries to their own benefit, but also gave the fields credibility through both continual investment and discursive positioning of these fields as central to their business.

Yet, the strategic niche management literature reminds us that expectations are subject to negotiation [4] and hence difficult to predict and control [39]. While firms might or might not be strategic in attempting to influence expectations, the articulation of expectations evolves in the interaction between innovation proponents and audiences [40], and through anticipatory practices in diverse arenas [41]. Hence, we understand the expectations surrounding new business models within a sector undergoing transformation as "identification, unfolding and specification of visions, requirements and preferences regarding the application of new and emerging technologies among customers, regulators and other stakeholders" [27]. This is likely to be particularly relevant in the case of new business models, where new ways of creating value, rather than technologies, are foregrounded. Following te Kulve and Konrad [27], we view the requirements and preferences of market and other stakeholders as co-constructed and co-evolving during the innovation process.

Our research focuses on how a new business model participates in the articulation of expectations *towards products, production methods and the rules governing these*, as we explore how the business model is interpreted and articulated by firm representatives, current and potential customers, other supply chain stakeholders, and powerful stakeholders in the institutional environment. In this way, we elaborate on potential aspects of institutional anchoring (i.e., probing of new connections between established and emerging beliefs [25] about user preferences and market rules) instigated by the involvement of a hybrid actor in innovative niche activities. We investigate the storylines that emerge when key stakeholders interpret a novel business model created by a hybrid actor, which has the potential to problematize the institutionalized beliefs, values and rules governing the energy market.

3. Context, research design, data and methods

We investigate the expectations engendered by a new business model in the energy sector through a single case study [42], allowing for detailed analysis of both actor interpretations and their context [26]. By analysing the relationship between established and emerging beliefs and assessments about user preferences and market rules in the niche and the regime, we identify provisional links that suggest institutional anchoring [25].We focus on the relatively centralized Finnish energy market [43], where (like elsewhere) incumbents are experimenting with different business models in order to survive the global energy transition. Following the dominant industry recipe, most of these experiments attempt to centralize renewable energy production [44], whereas few incumbents explicitly engage small-scale energy producers or distributed energy production [9].

While there are plenty of new business models that create markets for renewable generation of heat and electricity [10,13,45] Farm Power, launched by the incumbent energy company Oulun Energia, is an extreme case [46], since it represents a departure from the dominant centralized industry recipe by creating new relationships between the incumbent regime and niche actors. Farm Power is a service that creates a marketplace for consumers to buy electricity produced by other consumers. Instead of price, the service highlights quality aspects of energy production, including an artisanal mode of production as well as the locality and identity of the producers. The electricity delivered in the Farm Power service is produced in Finnish micro- and small-scale power stations that use solar-, wind- and hydropower plants, as well as bio- and wood gasification generators. Most producers use the majority of the electricity themselves and sell the excess electricity to Oulun Energia as Farm Power, since the power plants are connected to the grid. The small-scale producer sets the price for the electricity and Oulun Energia receives a premium of the energy sold, serving as the energy supplier and ensuring power balance availability in this role. Farm Power is thus a novel kind of a business model of an incumbent company acting in a new role as a hybrid actor that enables small-scale producers to offer electricity to consumers in the market at a price that they have set (instead of the price being determined on the market, e.g. the Nordic power exchange). Engagement in this new line of business allows Oulun Energia to differentiate its electricity sales and gain new revenues from brokering a specialty product to customers with an interest in the origins of their electricity.

This kind of constellation is unique in Finland, but emerges from the particular national context, which has been rather unsupportive of small-scale distributed energy production. The energy industry and relevant ministries trust a market-based energy policy approach that is believed to support economic growth [47]. This case study thus seeks to understand *what kinds of expectations a new business model evokes in different actors* that hold major discursive positions in the Finnish energy regime, which offers new insights on *the role of the hybrid actor in the energy sector transition*. The research on business model related expectations is therefore especially interesting in the context of Finland, since the Farm Power business model challenges the idea that electricity should be as cheap as possible in a country that has set cheap electricity as a high energy policy priority, due to a dominance of heavy industries in energy policy [48,49].

We analyze expectations at a particular point in time, while the transition is still ongoing and its direction is uncertain [2,25]. Since expectations are formed simultaneously in several different social and political fields, it is not possible to research them as a whole. Therefore, Oulun Energia's representatives, a leading Finnish researcher, Farm Power producers, consumer and a potential customer, politicians, incumbent and advocacy group representatives were chosen as interviewees for this research (see Table 1). They are all relevant interpreters of the novel business model and its institutional implications. The interviews of the Oulun Energia representatives offer a hybrid actor's perspective and the producers of Farm Power a prosumer perspective on expectations. Interest group representatives, politicians and the researcher hold major discursive power in the Finnish energy policy regime.

All the semi-structured interviews were conducted between June

Table 1
The interviewees sorted by stakeholder group and the organization.

	Stakeholder group	Organization
I.	Farm Power producer	Alpuan kehitys ry.
II.	Farm Power producer	BioKymppi
III.	Farm Power producer	Fiskarsin Voima
IV.	Farm Power producer	Vakkolan Voima
V.	Farm Power producer	Kiinteistö Oy Oulun Tarve
VI.	Consumer	–
VII.	Consumer	–
VIII,	Incumbent representative	Oulun Energia
IX.	Incumbent representative	Oulun Energia
X.	Advocacy group representative	Finnish Clean Energy Association
XI.	Advocacy group representative	Finnish Clean Energy Association
XII.	Advocacy group representative	Finnish Energy
XIII.	Politician	The Green Party
XIV.	Politician	National Coalition Party
XV.	Researcher	The Finnish Environment Institute (FEI)

2016 and April 2017. The producer and consumer interviews were conducted over the phone and all the rest in person, except for the National Coalition politician. The interviewee held a minister's position at the time, so he replied by email due to a tight schedule, which has implications for the analysis, as his views are presented in a written form rather than in a spoken form. Here the analysis is thus more on the content rather than on how the argument is presented.

We used some elements from argumentative discourse analysis as analytical tools for this research, since they enable us to break down the discursive patterns used by different actors in the field of energy policy and markets. Argumentative discourse analysis is widely applied in policy research, since it stresses the actors' discursive role in policy formation as well as the role of language in framing phenomena in specific ways that are drawn from the actors' social construction of reality [50]. It has been used in the analysis of energy technologies [51–53], carbon governance [54] and socio-technical transitions [55]. From this perspective, meanings are formed in continuous discursive processes, in which actors articulate their expectations. The storylines and discourses used today do not only influence interpretations of current phenomena, but also what is defined as possible, likely and desirable in the future [56]. Actors learn through these processes and modify their behavior accordingly [57].

While a full argumentative discourse analysis entails elaboration of discourse coalitions and their battle over discursive dominance (see e.g. [51,58]) as well as analyses of discourse structuration and institutionalization [50], our emphasis in this article is on identifying emerging storylines related to the novel business model and its impact on prevailing expectations about the energy market. Storylines are condensed statements that summarize complex narratives and reflect actors' emerging problem definitions: what aspects of a situation are framed as more important than others, and what social practices actors draw on to make sense of situations [50]. Since we are focusing on an emerging business model that is not yet widely known, conducting a comprehensive discourse coalition analysis at this stage of Farm Power development was not feasible.

In order to identify the emerging storylines that condense actors' expectations, the interview transcripts were first coded by similarities in the text, and then larger themes in discourses were identified. We were able to combine some of these themes as emerging storylines against a context-bound interpretation of the material. We will give an example of how we conducted the analysis in practice: We noticed that all the experts and politicians who knew the business model beforehand wanted to point out that Farm Power had won the Climate Action Prize of 2017, granted by the Sustainability Forum of the Finnish Energy Industries. We coded these parts of the text as *Climate Action Prize*. Other positive accounts related to the business model, such as referring to the service as a "goodwill thing" and talking about the "good feelings of the consumers". We coded these parts of the text as *positive service*. Furthermore, the prize was also linked with a wider positive service. This, together with other text samples formed a similar pattern that we outlined as the *fun service storyline,* which challenged institutional beliefs about the energy sector as serious, instrumental and cost-oriented.

In classifying the identified emerging storylines we drew from the strategic niche management literature and its conceptualization of niche innovations and regime rules [5]. We thus classified certain storylines as pertaining more to the niche innovation itself, and others as pertaining to the rules and beliefs of the dominant regime. The identified emerging storylines reflect the interpretations and expectations of the interviewees (see Table 1).

The results of discourse analysis naturally depend on the material, i.e. the interviewees in our case. This can be a limitation of the study if the interviewees happen to represent similar goals and interpretations: hence there might be additional emerging storylines that we have missed. In this study, we have attempted to avoid this problem by trying to find actors from different positions and organizations. The results of this study should thus be treated as indicators of relevant storylines emerging from this particular business model concerning the energy transition and incumbent actors' role in it; generalizations based on these findings should be treated with a healthy criticism. It is also worth noting that the change in expectations may be instigated by other developments than this business model, such as environmental movements for example. Moreover, we highlight that we only address institutional anchoring insofar as it pertains to the interviewees' beliefs and assessments about user preferences and market rules, rather than the initiation of actual regulatory reforms, for example.

4. Results

This section presents the main emerging storylines identified in the interview data. Leaning on the conceptual framework of institutional anchoring [25], we were able to identify in the data corpus four emerging storylines pertaining to the niche innovation itself and five story lines referring to dominant regime rules. Following the notion of institutional anchoring, these niche and regime storylines have implications for one another, creating pressures for finding links between niche and regime logics.

Farm Power was perceived as experimentation in all the niche level storylines. In the first, widely shared storyline Farm Power was described as *a fun and positive service*. All the interviewed Farm Power producers, politicians and experts shared the use of this storyline. The positivity was related to the customer's experiences, the Finnish Climate Action Prize won in 2014 and Oulun Energia's possibility to communicate about their environmental values. The producers of Farm Power built upon the storyline by relating the service to activism, environmentally friendly energy production and to a hobby that builds on and is similar to childhood games. This storyline expects the novel business model to be fun for the user. This is quite a surprising expectation, since previous research on Finnish consumers has found that electricity is seen as a necessity rather than particularly fun product [59]. The following quotes illustrate this emerging storyline:

> Well, it's a fun thing, and a fine experiment, and they [Oulun Energia] even got some award for it, I think, a few years back (MP, Green Party).

> Maybe it is a question of the kind of visibility you manage to create for the concept, whether it just links to this kind of image of a "feel good thing" (researcher, FEI).

> It is, after all, an opportunity. Even as a small boy I used to build these [water wheels] in forest creeks, - - so when the opportunity presented itself to play some more on a bigger scale - - then you just had to grasp it - - and I am really satisfied with my choice (Farm Power producer).

The second storyline defines Farm Power as a tool for Oulun Energia, producers and consumers to build their identities rather than "a real business model". In this *marginalizing* storyline, expressions relating to underrating, profit doubting and marginalizing the business model are prominent. The service was compared to sponsoring, club activities and luxury products that are used to communicate the consumer's identity and status. Yet, Farm Power was also seen as offering customers a way to identify as a person who is environmentally conscious and wants to support locally produced energy.

> *Well in my opinion – – the interesting question is what the scale is, or at what stage it grows to the scale of starting to require this kind of genuine business model. Because for the time being one could say that it is indeed this kind of, more like in the category of sponsorship, so you could just as well sponsor a folk dance society, and this is kind of an electricity society. And they do not have any big profit expectations, but if it grows, then they will need to reconsider (researcher, FEI).*

> A positive aspect is that Oulun Sähkönmyynti [the power sales company], well for them this isn't a business, it's more about them wanting to participate in developing a new operating model there, at this early stage (Farm Power producer).

By highlighting the role of the producers and the mode of production, Farm Power challenges the anonymity of electricity bought and sold over a spot market. Many Farm Power producers even welcome the customers to visit the power plant. This kind of transparency allows other values than just the price to guide the customer in their choices.

There is a strong connection between the storylines that describe the service as fun and positive and the one marginalizing the business model. They both connect doubtful sentiments that relate to seeing the service as a very small-scale "hobby activity" that will not produce much profit to the energy producers nor an adequate return on their financial investment.

> *Yes, yes, I have heard about this from someone, it's a fun example. Farm Power, well, I do not know how it works in a business sense for them, for the energy producer. What kind of price they get for selling – – and – – how large the price difference for these facilities is compared, then, to the market price in general (MP, Green Party).*

The third niche level storyline describes Farm Power as a *challenging service for consumers*. In this storyline, the interviewees would like the service to be easier for consumers to use. Farm Power was described as "a good start" but "a somewhat narrow service". Interviewees wished that in the future the service would function more easily and include more properties such as demand-side management services. This storyline was expressed especially by the representative of the energy industries and a politician. Contrastingly, in the fourth storyline producers described the service as *easy and helpful for the producer* although the problems in attracting customers were also discussed. The producers find the service easy to use for them, but unsold electricity left two producers pondering on why they did not manage to attract customers and what could be done better. This suggests that involvement in Farm Power is challenging producers to engage more actively with consumers as players in the energy market, rather than just as sellers of surplus electricity.

> Well consumers, – it needs to be easy, it needs to be packaged in a service and it needs to include, I think, automation and energy and the service. So I believe that these kinds of solutions are increasing. From that perspective, Farm Power might be a bit narrow. Because it just allows a small producer, after all, to sell [power] to another consumer (representative of Finnish Energy Industries).

> The service concept, well that is good. There is no getting out of it, the market [Nordic electricity exchange] is what it is and that can't be helped. I would say, for us penniless small potterers, we can't change the price of electricity and people's ways of thinking, well, that could be changed in the long term if we talk about things for long enough (Farm Power producer).

The storylines that defined Farm Power as a fun and an easy service for the producers are related to the positive expectations, whereas the storylines that define Farm Power as not really business and as challenging for the consumer are related to a difficulty to endure the incompleteness of new business models. This contradiction between the positive expectations and doubt exemplifies the struggle where Farm Power is, on the one hand, a small-scale hobby-like activity, and on the other hand, an experiment that changes the position of prosumers and thereby potentially influence the market.

These niche level storylines reflect the expectations that actors set for future business models. The niche level storylines differ significantly from the storylines pertaining to the rules of the dominant regime. On the niche level, the small-scale, environmentally friendly agenda and sympathetic nature of the business model were emphasized. At the regime level storylines, the small and harmless business model appeared as a phenomenon that challenges the regime and shapes the energy transition by questioning or reinterpreting deep-seated institutional rules and beliefs.

In the first regime-related storyline, the low market price of electricity was perceived as a problematic issue for the business model. In the storyline, *the low electricity price holds back new investments* in the energy sector and therefore hinders the energy transition. In addition, for the producers of Farm Power, making a reasonable profit is difficult. This storyline challenges the industrialist discourse of cheap electricity that is rooted in concerns over the competitiveness of the heavy industry [48]. This storyline makes it visible that the business model challenges the deeply entrenched belief that electricity should be produced as cheaply (and cost-efficiently) as possible.

> … [discussing auctioning of wind power feed-in-tariffs]… As long as we pay subsidies, it keeps the price of energy artificially lower than it would be otherwise. And that is a problem, because then new investments always require subsidies. So it is a vicious circle (MP, Green Party).

> … Politically it is a very strong [tendency], when you open any of these energy and climate strategies, then almost on the first line it says the starting point is to ensure affordable and secure energy provision. And then, when discussing [Finland's international] competitiveness, since these energy intensive companies and trade associations have had such a dominant role in all these discussions, well then it means this is very visible up front, and then indeed, the price of electricity is considered a matter of life and death for the nation (researcher, FEI).

The second and third regime-related storylines focus on subsidies for various forms of energy production. The second storyline suggests that *subsidies should be removed from energy sources*, including subsidies that damage the environment. The third storyline suggests, in contrast to the previous one, that *the subsidies for renewable energy should be increased to match the level of environmentally harmful subsidies.* Indeed, the subsidies policy in Finland has been considered to favor large production plants and to put small-scale production in a relatively weak position.

> At the moment the energy system relies too heavily on government subsidies. The tax on electricity also should be based on the price (of electricity). Reducing subsidies and changing the basis of the tax would enable market based business models *in the electricity sector in a completely different manner (politician, National Coalition Party).*

> *The only thing I pointed out was that distributed energy production should be treated equally compared to other energy production, in other words I'm referring to the investment subsidy… – – If this is like completely free that we won n*ot subsidize *anything, then ok, that's fine. That ok, then the markets would define it, but since we also have certain*

climate targets, they should also give direction (Incumbent representative, Oulun Energia).

These coalitions of energy industries repeat that subsidies, all subsidies need to be removed from renewables, that they make the investments impossible and all that – – in that kind of discourse they (such business models as Farm Power) can be significant, that now look this thing works without subsidies and in principle its fine, if things will be genuinely made to work without subsidies and, as long as there would be a genuine interest to be honest in a way that it would mean removal of subsidies, when also the subsidies for big energy consumers should be equally removed (researcher, FEI).

Especially the second regime-related storyline is connected to the fourth storyline that expresses the ideas of the interviewees that *the Farm Power business model is well aligned with the spirit of the ruling government*, because it reinforces the views that renewable energies can already survive in the market competition and do not need any state subsidies. Thus, Farm Power was seen as a form of self-regulation. While taking this position, these storylines show that the business model allows for diverse interpretations of its relationship with dominant regime rules, struggling toward an alignment of market-based policy ideals and a contested history of subsidization.

This is really in the spirit of the current government in that entrepreneurship is encouraged, all kinds of [activities] are encouraged, and I guess the question is whether it can grow or is it just a small-scale, nice service without a bigger meaning in environmental policy (researcher, FEI).

Interestingly, the fifth regime level storyline reveals expectations towards the service in having political power capable of influencing the energy transition. This storyline includes expectations that *the business model can influence policy making through its educational and exemplary character*. The service is seen as a "trailblazer" for other services that contribute to a transition of the whole system towards small-scale, renewable energy production. This is especially interesting through the obvious discrepancy between the niche level storylines that consider the service as marginal and a sort of a hobby activity of energy producers and the regime level storyline that assigns power to the business model. The service thus might be seen as having more influence than its actual size in terms of sales or profit would suggest.

…I was discussing this then with O [MP] there [in Parliament] and then S [prime minister] happened to walk past and O stopped him and said this is – – from the Clean Energy Association, so what do you think about net metering? – – then S just said he didn't think net metering was very realistic – – and that Farm Power is actually a way for the producer to get the higher price that they want – – so if they have a higher production cost for electricity, then they will find a customer who is willing to pay the price, and so Farm Power could grow its market in Finland (Finnish Clean Energy Association representative).

I was giving a presentation to the entire Cabinet and then I mentioned this insect [protein] resource and I had a lollipop made from meal worms. Well that got all the ministers excited: this is cool. That is dabbling too, whatever criteria you use to define it, but it raises interest and it can be used as an argument and it makes this question of protein security concrete. So – – small, and perhaps even ridiculous examples, they can serve as pedagogical devices. It is the same thing, I believe, with this Farm Power (researcher, FEI).

5. Discussion and conclusions

The aim of this paper was to understand what kinds of expectations a novel business model developed by a hybrid actor can generate. The role of hybrid actors in the energy transition deserves more in-depth research since those actors have the potential to create provisional links between novel solutions and the dominant market logics of the incumbent regime. While the role of businesses models in sustainability transitions has recently gained interest in the strategic niche management literature [2,8,10,11,30], the perspectives brought up by novel business models introduced by hybrid actors have not been widely explored. Our perspective follows the insight that business models are novel "industry recipes" [8] that are used to influence expectations, challenge contemporary rules and offer alternative ways to produce and use energy in the energy transition. This approach highlights the need to understand how expectations about user preferences and market rules evolve between and inside the niche and regime levels. In our empirical case, we identified nine emerging storylines that reflect the expectations of key actors in the energy sector. The storylines we identified offer an elaboration on how the new line of business, launched by a hybrid actor, calls into question deep-seated beliefs and creates pressure for reconsidering institutionalised rules, also among representatives of the dominant regime.

The Farm Power business model was perceived very differently when discussed from the perspective of the niche innovation itself or in relation to the rules of the dominant regime. The sympathetic, fun and small service on the niche level appears as a potentially dangerous and powerful rhetorical tool when considered in terms of the rules of the dominant regime. Our analysis thus shows that new business models can also challenge the regime, which reinforces the results of previous research in which business model innovations in niches can stretch the regulatory regime [13]. We found that the Farm Power business model challenged the regime, in particular, by questioning the position of cheap electricity as a political priority. We found that the longstanding industrialist discourse [48] was challenged by a storyline that defined the low price of electricity as harmful for distributed renewable energy generation, new investments and the energy transition. This is an interesting finding, since such expectations are subject to the path dependency and the slow change of normative and discursive fields.

The fact that Farm Power's impact expanded beyond the actual size of its sales can be interpreted as reflecting the broader question of how incumbent companies survive the transition. What kinds of novel earning logics are they able to design and how do they succeed in making investments profitable? In the storylines, there is a commonly shared view that the energy transition is inevitable, but where it leads to and what the role of such business models as Farm Power is remains an unanswered question. Our study indicates that the role of such novel business models that support small-scale, decentralized and renewable energy production may become more important, because the service as such is seen in a positive light although some doubts of its profitability remains. It was, in fact, implied that if the business model expands to include demand response and energy storage its role may become more powerful. Indeed, the service-oriented business model has been considered as a "good opening" in a transition phase of the energy market restructuring. Juntunen and Hyysalo [45] found in their review of 101 studies on microgeneration in business and deployment models, that servicetization may also hinder the development of local energy autonomy from a user perspective, even if it may boost the market development and popularity, lower prices and reliability of equipment for autonomous consumers in the long run. In the case of Farm Power, the service does not hinder the local energy autonomy from the user perspective, since the service only provides a marketplace for the energy producers, allowing the producers to own the technology and operational work related to the production.

Another interesting finding that made Farm Power "bigger than it actually is" was how the business model created institutional anchoring by challenging the regime level expectations on electricity being rather technical and mundane product that is evaluated mainly in terms of the price. Farm Power evoked people to imagine that the attractiveness of electricity can be determined on other criteria than price and that there is a new way for articulating electricity demand. The dominant and

persisting industrial discourse in Finland has been that consumers do not want to buy renewable energy because the price is too high [48]. Farm Power challenges these institutionalized beliefs and exemplifies that it is possible to offer consumers a service that is attractive because of a novel logic of connecting consumers and small-scale producers. The business model represents a new way of looking at energy provision, which encourages other incumbents into thinking out of the box and consumers to think about the origin of their electricity. Farm Power also challenges the established market expectation about the anonymity [1] of electricity by providing an alternative where the value of the product is linked to how and where it was produced and by whom. Many Farm Power producers support this by welcoming the customers to visit the power plant. This kind of transparency allows other values than just the price to guide customers in their choices.

Apajalahti et al. [19] raised the concern that energy regime incumbents can also have a hindering effect on the development of new technological fields like distributed energy. This is because the incumbents aim to steer the common vision of the future in a direction that benefits the technologies and norms they apply as part of their value creation. This paper shows that when incumbents act as hybrid actors they become credible proponents for a novel technology. So credible, in the case of Farm Power, that it was used by the Prime Minister as an evidence that small-scale renewable energy would not need any subsidies because it seemed to be ready for the markets where customers would pay the price premium. These kinds of expectations were most likely not strategically planned and expected by the creator of the business model, Oulun Energia. The results of this study suggests that the expectations that new business models generate are beyond the control of the hybrid actors that launch them.

We make three contributions to the literature on energy transitions. First, we extend the concept of hybrid actors [2,25] to the energy sector, where the battle between incumbents and new entrants has mainly been understood in terms of pre-defined interests [6,17,18]. Our extreme case shows how incumbents can create provisional links between niche and regime logics, promote renewable energy and influence expectations through business development, but cannot have strategic control over ensuing expectations and interpretations. With this, we do not contest analyses of strategic interests, but offer an additional perspective that interests can also be ambiguous and emergent.

Second, we elaborate on Elzen's and colleagues' [25] concept of institutional anchoring by making a close analysis of the changing expectations concerning institutional rules and beliefs articulated as a result of the launch of a new business model. We show how certain institutional rules, like the primacy of cheap energy, are called into question, while others such as the role of markets vs. subsidies are given new interpretations. Third, we extend current business model research within the strategic niche management tradition by focusing on expectations engendered by the creation and materialization of new "industry recipes" [8]. We thus suggest that business models are not of interest only for business, but also have implications for the terms of market competition (e.g., cost vs. product differentiation), for consumers and producers (anonymous vs. localized and personalized production), and for policy (design of support schemes and infrastructures for the energy transition). In particular, we highlight the experimental and exemplary nature of new business models in a transitional phase of the energy sector, when they have the potential to spark imaginations and (at least provisionally) materialize alternative transition pathways.

Further research on how novel business models influence expectations in the energy transition could cast light on how incumbent companies might survive the reconstruction of the sector, and what rules and beliefs need to change in order for this to occur. Our snapshot research has identified a branching point, where alternative business logics are at least provisionally possible in the energy sector: time will tell whether these are materialised. In addition, research could further test the value of discourse analysis in exploring the potential implications of various business models. This could be valuable since market insiders might not recognize how new business models challenge or extend established beliefs and rules, and what kinds of tensions they might entail [50]. In addition, such knowledge could help in the development of new and different policies to support business models that advance the energy transition towards sustainability.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Supplementary materials

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